

## **IN THE CLAIMS:**

Please substitute the following claims for the same-numbered claims in the application:

1. (Currently Amended) A computer-implemented method for determining a production plan, said method comprising:

receiving, by a computer, a file comprising purchase order receipts, said purchase order receipts being defined as line items on purchase orders;

performing, by said computer, a first rescheduling process comprising rescheduling when said purchase order receipts are to be received by a plant so as to indicate that said purchase order receipts will be received by said plant during earlier time periods than initially specified;

after said performing of said first rescheduling process, solving core production planning system equations with linear programming using rescheduled purchase order receipts associated with said earlier time periods from said first rescheduling process so as to determine an initial production plan;

after said solving, performing, by said computer, post-processing, said post-processing comprising:

performing a second rescheduling process comprising rescheduling when said rescheduled purchase order receipts from said first rescheduling process are to be received by said plant so as to indicate that said rescheduled purchase order receipts will be received by said plant during later time periods than specified during said first rescheduling process without causing inventory balances to be depleted to zero; and

generating and outputting, by said computer, a final production plan based on said initial production plan and said second rescheduling process.

2. (Previously Presented) The method of claim 1, wherein said first rescheduling process is based upon a field that indicates whether a receipt may be rescheduled to an earlier point in time.
3. (Previously Presented) The method of claim 1, wherein said first rescheduling process is based upon frozen zone rules.
4. (Previously Presented) The method of claim 1, wherein said second rescheduling process is based upon one of a date of need, frozen zone rules, and date tolerances.
5. (Previously Presented) The method of claim 1, further comprising after said solving, sorting of said rescheduled purchase order receipts from said first rescheduling process.
6. (Previously Presented) The method of claim 5, wherein said sorting is based upon one of arrival dates, purchase order receipt quantity, and the flexibility of purchase order receipt movement with respect to frozen zone rules.
7. (Previously Presented) The method of claim 1, further comprising recomputing ending inventory levels to reflect said second rescheduling process.

8. (Currently Amended) A computer-implemented method of rescheduling timing of when items on purchase orders are rescheduled to be received in a linear programming production planning system, said method comprising:

receiving, by a computer, a file comprising purchase order receipts, said purchase order receipts being defined as line items on purchase orders;

performing, by said computer, a first rescheduling process comprising rescheduling when said purchase order receipts are to be received by a plant so as to indicate that said purchase order receipts will be received by said plant during the earliest time periods allowable by a supplier, wherein said first rescheduling process is limited by at least one flag associated with at least one purchase order receipt, said at least one flag either preventing said at least one purchase order receipt ~~from~~ from being rescheduled or limiting an extent to which said at least one purchase order receipt can be rescheduled;

after said performing of said first rescheduling process, solving core production planning system equations with linear programming using rescheduled purchase order receipts associated with said earliest time periods allowable by said supplier from said first rescheduling process so as to determine an initial production plan;

after said solving, performing, by said computer, post-processing, said post-processing comprising:

sorting said rescheduled purchase order receipts from said first rescheduling process, based on predetermined criteria, and, based on said sorting, performing, by said computer, a second rescheduling process comprising rescheduling when said rescheduled purchase order receipts from said first rescheduling process are to be received by said plant so as to indicate that said

rescheduled purchase order receipts will be received by said plant during the latest time periods allowable by said supplier without causing inventory balances to be depleted to zero; and generating and outputting, by said computer, a final production plan based on said initial production plan and said second rescheduling process.

9. (Cancelled).

10. (Previously Presented) The method in claim 8, wherein said sorting comprises:

sorting said rescheduled purchase order receipts into different classes of rescheduling flexibility;

sorting said rescheduled purchase order receipts within each of said classes of rescheduling flexibility into different classes of arrival dates; and

sorting said rescheduled purchase order receipts within each of said classes of arrival dates based on quantities within said rescheduled purchase order receipts.

11. (Previously Presented) The method in claim 8, wherein said second rescheduling process reschedules each of said purchase order receipts into the latest time period before the corresponding inventory level would be depleted to zero.

12. (Previously Presented) The method in claim 8, wherein if a time period for receiving by said plant of a purchase order receipt can be extended beyond the latest date of the planning

horizon of said linear programming production planning system, said purchase order receipt is eliminated.

13. (Previously Presented) The method in claim 8, further comprising recomputing ending inventory levels to reflect said second rescheduling process.

14. (Previously Presented) The method in claim 8, wherein said second rescheduling process limits rescheduling to comply with contractual obligations and to avoid trivial rescheduling.

15. (Currently Amended) A computer-implemented method of rescheduling timing of when items on purchase orders are rescheduled to be received in a linear programming production planning system, said method comprising:

receiving, by a computer, a file comprising purchase order receipts, said purchase order receipts being defined as line items on purchase orders;

performing, by said computer, a first rescheduling process comprising rescheduling when said purchase order receipts are to be received by a plant so as to indicate that said purchase order receipts will be received by said plant during the earliest time periods allowable by a supplier;

after said performing of said first rescheduling process, solving core production planning system equations with linear programming using rescheduled purchase order receipts associated with said earliest time periods allowable by said supplier from said first rescheduling process so as to determine an initial production plan;

after said solving, performing, by said computer, post-processing, said post-processing comprising:

sorting said rescheduled purchase order receipts from said first rescheduling process according to rescheduling flexibility and, based on said sorting, performing, by said computer, a second rescheduling process comprising rescheduling when said rescheduled purchase order receipts from said first rescheduling process are to be received by said plant so as to indicate that said rescheduled purchase order receipts will be received by said plant during the latest time periods allowable by said supplier without causing inventory balances to be depleted to zero; and generating and outputting, by said computer, a final production plan based on said initial production plan and said second rescheduling process.

16. (Previously Presented) The method in claim 15, wherein said first rescheduling process is limited by flags associated with said purchase order receipts that one of prevent said purchase order receipts from being rescheduled, and limit the extent to which said purchase order receipts can be rescheduled.

17. (Previously Presented) The method in claim 15, wherein said sorting comprises:

sorting said rescheduled purchase order receipts into different classes of rescheduling flexibility;

sorting said rescheduled purchase order receipts within each of said classes of rescheduling flexibility into different classes of arrival dates; and

sorting said rescheduled purchase order receipts within each of said classes of arrival dates based on quantities within said rescheduled purchase order receipts.

18. (Previously Presented) The method in claim 15, wherein said second rescheduling process reschedules each of said rescheduled purchase order receipts into the latest time period before the corresponding inventory level would be depleted to zero.

19. (Previously Presented) The method in claim 15, wherein if a time period for receiving by said plant of a purchase order receipt can be extended beyond the latest date of the planning horizon of said linear programming production planning system, said purchase order receipt is eliminated.

20. (Previously Presented) The method in claim 15, further comprising recomputing ending inventory levels to reflect said second rescheduling process.

21. (Currently Amended) A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform a method of rescheduling timing of when items on purchase orders are rescheduled to be received in a linear programming production planning system, said method comprising:

receiving a file comprising planned purchase order receipts, said purchase order receipts being defined as line items on purchase orders;

performing a first rescheduling process comprising rescheduling when said purchase order receipts are to be received by a plant so as to indicate that said purchase order receipts will be received by said plant during the earliest time periods allowable by a supplier, wherein said first rescheduling process is limited by at least one flag associated with at least one purchase order receipt, said at least one flag either preventing said at least one purchase order receipt from being rescheduled or limiting an extent to which said at least one purchase order receipt can be rescheduled;

after said performing of said first rescheduling process, solving core production planning system equations with linear programming using rescheduled purchase order receipts associated with said earliest time periods allowable by said supplier from said first rescheduling process so as to determine an initial production plan;

after said solving, performing, by said computer, post-processing, said post-processing comprising:

sorting said rescheduled purchase order receipts from said first rescheduling process, based on predetermined criteria, and, based on said sorting, performing a second rescheduling process comprising rescheduling when said rescheduled purchase order receipts from said first rescheduling process are to be received by said plant so as to indicate that said rescheduled purchase order receipts are to be received by said plant during the latest time periods allowable by said supplier without causing inventory balances to be depleted to zero; and  
generating and outputting a final production plan based on said initial production plan and said second rescheduling process.



22. (Cancelled).

23. (Previously Presented) The program storage device in claim 21, wherein said sorting comprises:

    sorting said rescheduled purchase order receipts into different classes of rescheduling flexibility;

    sorting said rescheduled purchase order receipts within each of said classes of rescheduling flexibility into different classes of arrival dates; and

    sorting said rescheduled purchase order receipts within each of said classes of arrival dates based on quantities within said rescheduled purchase order receipts.

24. (Previously Presented) The program storage device in claim 21, wherein said second rescheduling process reschedules each of said purchase order receipts into the latest time period before the corresponding inventory level would be depleted to zero.

25. (Previously Presented) The program storage device in claim 21, wherein if a time period for receiving a purchase order receipt can be extended beyond the latest date of the planning horizon of said linear programming production planning system, said purchase order receipt is eliminated.

26. (Previously Presented) The program storage device in claim 21, wherein said method further comprises recomputing ending inventory levels to reflect said second rescheduling process.

27. (Previously Presented) The program storage device in claim 21, wherein said second rescheduling process limits rescheduling to comply with contractual obligations and to avoid trivial rescheduling.